

What is claimed is:

1. A combination comprising a plurality of cDNAs that are differentially expressed in cells treated with a DNA demethylating agent, wherein the cDNAs are SEQ ID NOs:1-25 and their complements.

5 2. The combination of claim 1, wherein each of the cDNAs is upregulated at least 2.5-fold and is selected from SEQ ID NOs:1-18.

3. The combination of claim 1, wherein each of the cDNAs is downregulated at least 2.5-fold and is selected from SEQ ID NOs:19-25.

4. The combination of claim 1, wherein the cells are from a colon tumor.

5. The combination of claim 1, wherein the DNA demethylating agent is 5-aza-2-deoxycytidine.

10 6. The combination of claim 1, wherein the cDNAs are immobilized on a substrate.

7. A high throughput method for detecting differential expression of one or more cDNAs in a sample containing nucleic acids, the method comprising:

15 a) hybridizing the combination of claim 1 with nucleic acids of the sample, thereby forming one or more hybridization complexes;

b) detecting the hybridization complexes; and

c) comparing the hybridization complexes with those of a standard, wherein differences between the standard and sample hybridization complexes indicate differential expression of cDNAs in the sample.

20 8. The method of claim 7, wherein the nucleic acids of the sample are amplified prior to hybridization.

9. The method of claim 7, wherein the sample is from a subject with colon cancer being treated with a therapeutic agent and comparison with a standard is indicative of remission.

25 10. A high throughput method of screening a plurality of molecules or compounds to identify a molecule or compound which specifically binds a cDNA, the method comprising:

a) combining the combination of claim 1 with the plurality of molecules or compounds under conditions to allow specific binding; and

25 b) detecting specific binding between each cDNA and at least one molecule or compound, thereby identifying a molecule or compound that specifically binds to each cDNA.

11. The method of claim 10 wherein the plurality of molecules or compounds are selected from DNA molecules, RNA molecules, peptide nucleic acid molecules, mimetics, peptides, transcription factors, repressors, and regulatory proteins.

30 12. An isolated cDNA selected from SEQ ID NOs:1, 11-18, and 25

13. A vector containing the cDNA of claim 12.

14. A host cell containing the vector of claim 13.

15. A method for producing a protein, the method comprising the steps of:

a) culturing the host cell of claim 14 under conditions for expression of protein; and

b) recovering the protein from the host cell culture.

35 16. A protein or a portion thereof produced by the method of claim 15.

17. A high-throughput method for using a protein to screen a plurality of molecules or compounds to identify at least one molecule or compound which specifically binds the protein, the method comprising:

- a) combining the protein of claim 16 with the plurality of molecules or compounds under conditions to allow specific binding; and
- 5 b) detecting specific binding between the protein and a molecule or compound, thereby identifying a molecule or compound which specifically binds the protein.

18. The method of claim 17 wherein the plurality of molecules or compounds is selected from DNA molecules, RNA molecules, peptide nucleic acid molecules, mimetics, peptides, proteins, agonists, antagonists, antibodies or their fragments, immunoglobulins, inhibitors, drug compounds, and

10 pharmaceutical agents.

19. A method of using a protein to produce and purify an antibody, the method comprising:

- a) immunizing an animal with the protein of claim 14 under conditions to elicit an antibody response;
- b) isolating animal antibodies;
- c) contacting the isolated antibodies with the protein; thereby forming protein:antibody complex;
- d) dissociating the protein from the complex; and
- e) collecting purified antibody

20. A purified antibody produced by the method of claim 19.